

## **GEOHAZARD REPORT REQUIREMENTS: 2013 CBC**

<b>Disciplines:</b>	Structural	<b>History:</b>	Revised 09-11-15	Revised 06-25-10	Revised 07-21-05
			Revised 12-19-13	Revised 06-17-09	Revised 02-03-04
			Revised 10-11-11	Revised 11-01-07	Issued 09-01-99

**PURPOSE:** The purpose of this Interpretation of Regulations (IR) is to outline the requirements for projects within the jurisdiction of the Division of the State Architect (DSA), for the submission of a geohazard report to the California Geological Survey (CGS) for acceptance, and subsequently to DSA.

**SCOPE:** This IR is applicable for projects submitted to DSA for review under the 2013 edition of the California Building Code (CBC). For projects submitted for review under prior editions of the CBC, see IR A-4.

**BACKGROUND:** A geohazard is any geologic condition that is a potential danger to life or property. Geohazards include, but are not limited to, *ground shaking, surface rupture, liquefaction, tsunami and landslides*.

The California Administrative Code, Section 4-317(e) includes requirements for the performance of geotechnical (soils) studies and geohazard studies. Note that “Geotechnical Reports” (or soils investigation reports) often include soils studies only and might not include complete geohazard studies.

In addition, the CBC, Section 1803A describes requirements for engineering geologic reports, supplemental ground-response reports, and geotechnical reports. Any of these reports may contain elements of the geohazard studies, and shall all be submitted to CGS for review.

**1. GENERAL PROCEDURE:** When a geohazard report is required for a project (see criteria in Section 2 below), the report must be submitted to the CGS before the project is submitted to DSA. Final DSA approval will not occur until DSA receives the final acceptance letter from CGS. It is the responsibility of the applicant to provide the CGS acceptance letter to the DSA and reference the DSA Application Number for the project.

If a provisional acceptance letter is issued by CGS, as often required for projects with ground improvements, see Section 8.

**1.1 Submittal to CGS:** School districts are responsible for the submittal of the geohazard report to CGS and for the cost of review. Reports should be submitted to CGS approximately two months prior to submittal of the project to DSA; contact CGS for its current review timelines. Instructions are available on CGS website:

<http://www.conservation.ca.gov/cgs/rghm/reviews/Pages/faq.aspx>

The geohazard report submittal to CGS shall include a site data report as required by CBC, Section 1603A.2.

**1.2 Submittal to DSA:** A copy of the geohazard report, site data report, and the application to CGS indicating the CGS project number shall be submitted to DSA along with the initial DSA project application.

**2. PROJECTS REQUIRING GEOHAZARD REPORTS:** A geohazard report shall be submitted to the CGS for projects as described below.

**2.1 Site Specific Ground Motion Analysis:** A geohazard report is required for any project for which a site specific ground motion analysis is required or voluntarily used to develop seismic parameters used for design.

---

**GEOHAZARD REPORT REQUIREMENTS: 2013 CBC**

---

The site specific ground motion analysis requirements of CBC, Section 1616A.1.3 (1616.10.2\*) and ASCE 7, Section 11.4.7 are not required for projects delineated in Section 3 as not requiring a geohazard report.

**2.2 New Sites:** A geohazard report is required for all construction on a new site.

**2.3 New Structures on Existing Sites:** A geohazard report is required for all new buildings or structures, except as delineated in Section 3.

**2.4 Additions:** A geohazard report is required for all additions except as delineated in Section 3.

**Note:** When an addition involves alterations to an existing building, the geohazard reporting requirements of Section 2.5 also apply.

**2.5 Alterations to Existing Buildings:** A geohazard report is required for alterations which:

**2.5.1** Involve rehabilitation of a structure per Title 24, Part 1, Section 4-307 or 4-309(c),

**2.5.2** Voluntarily modify the lateral force resisting system (per Title 24, Part 1, Section 4-309(d)) and include new foundations supporting seismic force resisting systems which utilize any one of the following:

- deep foundations, or
- spread foundations designed for bearing pressures that exceed the maximum recommended foundation soil bearing pressures in an existing geotechnical report for that structure or, when a report is not available, the values set forth in CBC Table 1806A.2, or
- foundations that are not deformationally compatible with the existing foundations (e.g. adding spread footings to a structure supported on deep foundations).

**2.5.3** Repair of structural earthquake damage, per Title 24, Part 1, Section 4-309(e).

**3. PROJECTS NOT REQUIRING GEOHAZARD REPORTS:** For projects on existing sites, with scope limited to one or more of those described in Sections 3.1 through 3.2.3 below, a geohazard report is not required.

**3.1 For Any Existing Site, Regardless of Location:**

**3.1.1** Sitework, non-building structures, or structures not intended for human occupancy, unless such construction is essential to the operation of the facility.

- Non-building structures include, but are not limited to, light poles, flag poles, signs, scoreboards, ball walls, fences, and retaining walls. Non-building structures do not include structures that shelter a use or occupancy such as canopies, lunch shelters, or carports.
- A “structure for human occupancy” is, “...any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year” in accordance with Title 14, Division 2, Chapter 8, Subchapter 1, Article 3, Section 3601(e).

**Note:** Non-building structures “essential to the use of the facility” **do require** the submission of geohazard reports. Such structures include:

- elevated water tanks necessary for fire protection,
- earth retaining structures when failure of such structures could endanger occupied structures,
- communications towers serving Risk Category IV (essential services) buildings,
- and other similar structures.

---

**GEOHAZARD REPORT REQUIREMENTS: 2013 CBC**

---

**3.1.2** Structures not defined as a “School Building” per Title 24, Part 1, Section 4-314 and exempt from DSA structural review as indicated in [IR A-22](#) Appendix A.

**3.1.3** Temporary buildings as defined in Title 24, Part 1, Section 4-302(b).

**3.2 Existing Sites Outside of a Mapped Geologic Hazard Zone:** In addition to the project scopes described in Section 3.1.1 through 3.1.3, above, projects on existing sites which are outside of a “mapped geologic hazard zone” (as defined in Section 4 below) are exempt from the requirement to provide a geohazard report if they involve only:

**3.2.1** One or more single-story, wood-frame or light-steel frame structures of Type II or V construction, seismically separated into areas of 4,000 square feet or less in covered area. Such structures may include, but are not limited to, most relocatable buildings and plywood shear wall buildings.

**3.2.2** Isolated elevator towers serving no more than two levels.

**3.2.3** Open metal site structures (e.g. structural steel, aluminum, etc.) seismically separated into areas of 4000 square feet or less in covered area. Such structures may include but are not limited to shade structures, bleachers, canopies, and carports.

**4. DEFINITION OF A “MAPPED GEOLOGIC HAZARD ZONE”:** A mapped geologic hazard zone includes:

- a “Seismic Hazard Zone,” as identified by CGS, or
- an “Alquist-Priolo Earthquake Fault Zone” as identified by CGS, or
- a fault, landslide, liquefaction, tsunami, or other geologic hazard zone defined in the Safety Element of a Local General Plan.

**5. RE-USE OF EXISTING GEOHAZARD REPORTS:** An existing geohazard report may be used for a new project if the existing report is based on adequate studies (refer to CGS Note 48 for guidance), a reevaluation is made, and the report is found to be currently appropriate. The existing report for the site and the reevaluation must be submitted to the CGS for approval for each project.

A reevaluation is not required if all three of the following conditions are met:

1. The original geohazard report included the scope of construction proposed for the project.
2. The applicable building code has not changed since the original report was issued.
3. The project is submitted to DSA within the time limit described in the original report.

**Note:** Subsequent significant geologic events may invalidate an existing Geohazard Report.

**6. SCOPE OF GEOHAZARD STUDIES:** For guidance in conducting a study and reporting evaluations and recommendations, refer to:

- Special Publication 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (2008)  
<http://www.conservation.ca.gov/cgs/shzp/webdocs/Documents/sp117.pdf>
- Special Publication 42 *Fault-Rupture Hazard Zones in California* (Interim Revision 2007, including one supplement)  
<ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf>

**GEOHAZARD REPORT REQUIREMENTS: 2013 CBC**

CGS Note 48 will be used as a guide for review by CGS:

[http://www.conservation.ca.gov/cgs/information/publications/cgs\\_notes/note\\_48/Documents/note\\_48.pdf](http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_48/Documents/note_48.pdf)

**7. CONTENT OF GEOHAZARD REPORTS:** Requirements regarding contents of geohazard reports are addressed by CGS:

<http://www.conservation.ca.gov/cgs/rghm/reviews/Pages/Default.aspx>

**8. REQUIREMENTS FOR SOIL IMPROVEMENT PROJECTS WITH CGS PROVISIONAL ACCEPTANCE:** If a provisional acceptance letter is issued by CGS, as often required for projects with soil improvements, DSA approval of the construction documents may occur provided the conditions in this Section are complied with. However, foundation construction may not commence until the soil improvements and supplemental testing have been completed, and a final acceptance letter is issued by CGS and processed by DSA as a deferred submittal.

**8.1. Construction Documents Note:** The following paragraph shall be placed on the project title sheet.

“The Geotechnical Engineer shall submit a comprehensive report documenting final soil improvements constructed, construction observation, and the results of the confirmation testing and analysis to the California Geological Survey (CGS). The project foundation construction shall not commence until final CGS acceptance letter is issued and processed by DSA as a deferred submittal.”

**8.2. Deferred Submittal:** DSA will process the CGS final acceptance letter as a deferred submittal. The following shall be indicated as a deferred submittal on the construction documents and in eTracker.

“Soil Improvement - CGS Final Acceptance of Geohazard Report”

**8.3. Statement of Structural Tests and Special Inspections (DSA 103):** The following items shall be added to the form DSA 103 under item “6. Other Soils”:

Test or Special Inspection	Type	Performed By	Code Reference and Notes
a. Soil Improvements	Test	GE	Submit a comprehensive report documenting final soil improvements constructed, construction observation, and the results of the confirmation testing and analysis to CGS for final acceptance.
b. Inspection of Soil Improvements	Continuous	GE	

**8.4. DSA eTracker:** The following note shall be added to the Plan Check Worksheet “Notes”:

“The CGS final acceptance is not issued; Geotechnical engineer shall submit a comprehensive report documenting final soil improvements constructed, construction observation, and the results of the confirmation testing and analysis to CGS for final acceptance prior to foundation construction.”

**REFERENCES:**

California Code of Regulations, Title 24

Part 1: 2013 California Administrative Code, Section 4-317(e)

Part 2: 2013 California Building Code, Sections 1603A2, 1613A, 1616A, 1613\*, 1616\*, and 1803A

---

## **GEOHAZARD REPORT REQUIREMENTS: 2013 CBC**

---

This Administrative Interpretation of Regulations (IR) is intended for use by Division of the State Architect (DSA) staff, and as a resource for design professionals, to promote more uniform statewide criteria for plan review and construction inspection of projects within the jurisdiction of DSA, which includes State of California public elementary and secondary schools (grades K-12 and community colleges), and state-owned or state-leased essential services buildings. This IR indicates acceptable practices as stipulated in the California Administrative Code (Title 24, Part 1) and aligning with DSA policies and procedures.

This IR is reviewed on a regular basis and is subject to revision at any time. Please check the DSA website for currently effective IRs. Administrative and technical IRs are listed on the DSA website at:

<http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx>

Administrative IRs are effective upon publication. Questions regarding the effect for existing projects can be directed to the DSA Regional Office with plan review and construction oversight authority for the project.

\*Indicates alternative California Building Code (CBC) sections that community colleges may use, per 2010 CBC Section 1.9.2.2